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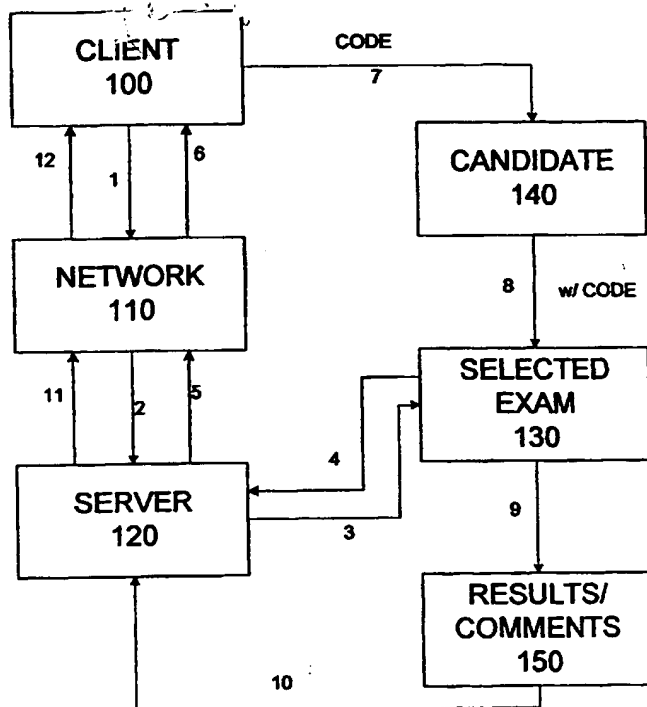
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(54) Title: METHOD AND SYSTEM FOR SKILLS ASSESSMENT



(57) Abstract: Skill assessment exams are administered to prospective employment candidates (140) for clients, preferably over a network (110) such as the Internet. A server (120) is connected to a database of skill assessment exams so that candidates, using a browser and a client-supplied code, can access the server (120) over the network (110) in order to take a selected exam (130). The server (120) immediately grades the exams and notifies the client (100) when a candidate (140) has completed an assessment exam. Results can be viewed and managed by the client (100) over the network (110). Clients (100) can select standard exams or create custom exams for prospective candidates (140).

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**TITLE: METHOD AND SYSTEM FOR SKILLS ASSESSMENT****1 FIELD OF THE INVENTION**

2 The present invention is drawn to a system to allow clients, such as recruiters and  
3 prospective employers, to screen the skills of candidates without having to tie up their own  
4 employees. More particularly, it is drawn to using the Internet to administer and evaluate the  
5 results of a broad database of skills assessment exams.

**6 BACKGROUND OF THE INVENTION**

7 Part of the duties of the human resources department in any corporation is the pre-  
8 screening and hiring of company employees. For the most part, members of the human  
9 resources department have been trained in the art of asking candidates the right type of  
10 questions to grade their abilities as they apply to the position. The challenge that has arisen  
11 in the last ten years, though, is the rapid development of the technology infrastructure inside  
12 almost every major corporation. The typical human resources manager is not capable of  
13 handling the challenges of qualifying technical candidates properly. Most managers are very  
14 aware of this problem and are in need of systems that would overcome such deficiencies.  
15 Most human resources managers who receive a degree in human resources at a major college  
16 or university have little if any formal training in qualifying computer technology personnel,  
17 for example. The same problem arises in any other specialized or technical field. This  
18 challenge has put almost all human resource managers at a disadvantage, which in turn has  
19 put a great deal of pressure on the human resources department when making hiring  
20 decisions. To date, human resources departments, or their equivalents, do not have a  
21 measurement tool at their disposal that would help them gauge the proficiency of candidates.

22 Most large corporations in the last seven or so years have acknowledged their human  
23 resources deficiencies, but the steps they are taking to combat the problems have been futile.  
24 Corporations, in some cases, only expect their human resources managers to act as a pre-  
25 screening buffer, whose job is to give the candidate a "look-over" and, if acceptable, send the  
26 candidate to the respective department for a technical interview. From that point, usually a  
27 team of employees from the department will spend time technically qualifying the candidate  
28 in a face to face interview. If the group collectively feels that the candidate technically  
29 qualifies, the department hiring manager will meet the candidate for a technical screening. In  
30 the majority of hiring interview cases, the human resources manager lacks the ability to  
31 properly pre-screen the candidate's technical proficiencies, or lack thereof. The only  
32

1 barometer that is available to measure the candidate's technical proficiency is the candidate's  
2 résumé, which is often self-serving and circumstantial.

3 This process has proved to be an ineffective method. Existing employees are being  
4 forced to interview numerous candidates before they find the right person for their specific  
5 requirements. This process is also causing a great deal of pressure between the human  
6 resources department and the departmental hiring managers, due to the amount of people and  
7 resources that the department has to dedicate to the interview process, before finally finding a  
8 qualified candidate.

9 The corporation as a whole suffers from this process, due to the amount of time and  
10 resources that the employees are surrendering each day to interview candidates. The  
11 interviewing process interferes with the daily duties for a significant duration of time. An  
12 interview usually lasts somewhere between 45 minutes to an hour and a half per candidate.  
13 This is obviously a very inadequate solution to an already difficult problem. There is no  
14 justification for having a department that is obviously already strained, due to its need for an  
15 additional employee, compound the situation by pulling away its staff to conduct a series of  
16 interviews. This is especially true, and a major concern, when it applies to team interviews.  
17 For example, if a department uses a three-employee team to interview six candidates with an  
18 average interview duration of one hour, the time cost to the department is over 18 hours of  
19 productive man time.

20 Accordingly, there is a need for a system to allow corporations and other prospective  
21 employers to screen the skills of applicants without having to tie up their own employees.

22 Independent contract recruiters were also facing the same problem as corporations'  
23 human resources departments. Recruiters were also seeking a solution to their technical  
24 evaluation needs.

25 With the advancements made in computer technology in the last few years, the  
26 utilization of an Internet type solution was sought. There were some available sites, but they  
27 were deficient in meeting the needs. Some of the available sites only tested single topics,  
28 while others charged per single test administration. These solutions were not adequate  
29 because the testing needed to address a broad range of skills in a multitude of different  
30 subject matters. Additionally, a per subject test fee simply was not practical or cost-effective.  
31 Accordingly, there was a need to develop a technical evaluation program tailored to fit a wide  
32 range of needs.

33

**BRIEF SUMMARY OF THE INVENTION**

The present system uses the Internet to administer and evaluate a broad database of skills assessment exams, allowing recruiters and prospective employers to screen the skills of applicants without having to tie up their own employees.

It is an object of the invention to provide a system to allow recruiters and prospective employers to screen the skills of applicants without having to tie up their own employees.

It is a further object of the invention to provide a means for using the Internet to administer and evaluate a broad database of skills assessment exams.

It is another object of the invention to provide a means for using the Internet to create, administer, and evaluate customized skills assessment exams.

It is another object of the invention to provide a means for automatically notifying a test creator when a candidate has completed an assessment exam.

It is yet another object of the invention to provide an exam process that is secure and tamper-resistant, yet allows candidates to take an exam from anywhere in the world via the Internet.

**BRIEF DESCRIPTION OF THE DRAWINGS**

**Figure 1** illustrates a first embodiment of the present invention.

**Figure 2** discloses some examples of the subjects to be covered by the present invention.

**Figure 3** shows a possible grouping of exams for a technical support candidate in accordance with the present invention.

**Figure 4** shows a grouping of tests exemplary of the present invention.

**Figure 5** shows some of the tests for office skills of the present invention.

**Figure 6** shows one sample of the results report of the present invention.

**Figure 7** shows another sample of the results report of the present invention.

**Figure 8** illustrates a page for viewing a selected exam and the associated candidates for the administration of the present invention.

**Figure 9** illustrates an exam taker management area page of the present invention.

**Figure 10** illustrates an exam modification or deletion page of the present invention.

## DETAILED DESCRIPTION OF THE INVENTION

The present system starts with one or more databases of assessment exams. Exams covering similar subject matter can be grouped together on separate databases if desired for access speed or other functional reasons. Figure 2 gives some examples of the subjects to be covered. Additional subjects are added as the need arises or as the technology develops. This listing is intended to provide examples and not as limiting the scope of the invention.

Some of these tests are grouped together for certain job specifications. As an example, figure 3 shows the possible grouping of exams for a technical support candidate.

Figure 4 shows a grouping of tests designed to evaluate the skills and knowledge of those candidates applying for entry level positions in a computer or information technology group.

While the system is particularly helpful for computer technology employment, it is also utilized for testing for various other skills such as office worker, medical staff, legal assistants, litigation support staff, accounting personnel, customer service and the like.

Figure 5 shows some of the tests for office skills.

The tests are designed to provide the most information in the shortest test period. Feedback from the test results is utilized to modify and optimize the test. Additionally, a customer or client can supply their own private test to be added to the database.

The present system provides recruiters with the flexibility of designing a customized technical exam in a very short period of time. In accordance with one embodiment, the customization can take place in less than three minutes. The system provides an extremely user-friendly interface that requires only a very few steps to create an exam. The following outline describes the five easy steps to create one of the exams in accordance with one embodiment of the invention.

1. After entry into the Internet web site, the user would click on the "Create An Exam" icon and type in the username and password. The program will then generate a page that would allow the user to view every subject and skill level.
2. The user chooses the subjects and skill levels that are desired for the exam. In accordance with one embodiment of the invention, there are three skill levels for each exam. The user may give exams in all three skill levels if desired.
3. At the bottom of the page, the user clicks on "Create This Exam". The program will then generate an outline of the customized exam that was just created. The program will then ask if the user wishes to make any changes to the exam.

1           4.     If the exam outline is acceptable, the user is prompted to give the exam a name  
2                 in a special field. If the exam outline is not acceptable, the user clicks on a  
3                 "Back" button on the desktop computer to make changes.

4           5.     After all the changes are made, an "Okay" button is clicked by the user. The  
5                 program will then give the user a code number which is utilized by the user to  
6                 give to the candidates whenever the user wishes one candidate to take that  
7                 specific exam. The program will also email the user this information for their  
8                 records.

9           A user may design as many exams as are desired by clicking on the "Create An  
10          Exam" icon. The above five steps are repeated for each type of exam created.

11          A candidate can take the exam, once they have the code number, at any time by  
12          accessing the database from any site. Since the test does not have to be administered at the  
13          prospective employers site, taking the test can be done 24 hours a day, all days of the year.  
14          Accessing the test site over the Internet is the preferred method. This allows access by the  
15          largest number of potential candidates. Those candidates that do not have access to the  
16          Internet can still utilize the system at the employer's site or other sites available to the public.  
17          The ability to access the system over the Internet also bridges geographic boundaries. The  
18          test is available to the candidate at any time from anywhere in the world that has Internet  
19          connection. Once the candidate takes the exam, the test creator is automatically notified via  
20          email.

21          The process allows users to customize their own exams. This is advantageous,  
22          because a recruiter cannot be an expert in every release of every product in every  
23          environment. The system of the present invention provides an online screening tool to  
24          combat that very challenge. With the present invention, a recruiter can design an exam that is  
25          specific to the particular technical needs. The system can handle a significant number of  
26          different subjects available in various difficulty levels. In accordance with one embodiment,  
27          a recruiter may utilize exams covering over 100 different subjects available in three different  
28          difficulty levels. The recruiter can pick and choose the skill requirements to match the needs.  
29          This flexibility gives the recruiter great advantage when interviewing a candidate. It allows  
30          the recruiter to already know where the weak points are with the candidate as they apply to  
31          the specific requirements. Additionally, others in the organization may have reviewed the  
32          technical results of the technical exams. The exams are structured in such a way as to  
33          provide additional validation to candidates' statements on their résumés regarding their  
34          technical abilities before an organization invests additional time and effort in the interview

1 process. The results of the exams in accordance with the present invention would eliminate  
2 wasted time in the interview process and, at a minimum, reduce the amount of time spent in  
3 interviewing by allowing some external feedback about the candidates prior to the personal  
4 interview process. Additionally, the ability to verify a candidate's claims on their résumé  
5 eliminates future problems in case the candidate has exaggerated or misrepresented their  
6 qualifications.

7 In accordance with the present invention, the exams are structured to give various  
8 exams directed to various levels of expertise in any one particular subject. For example,  
9 three separate skill levels are provided for each subject. These levels are put in place so that  
10 recruiters can measure their candidate at the true level that is desired for each specific  
11 position. For example, when a requirement calls for a basic understanding of a subject  
12 matter, a beginner level or basic level exam is structured for these purposes. On the other  
13 hand, if the position requires three years of heavy experience, for example, the basic level test  
14 would not provide the proper feedback for such a requirement. In accordance with the  
15 present invention, the recruiter can design the exam around the specific levels of skill sets  
16 that are needed and save the time and aggravation of trying to decide if a candidate has  
17 enough ability to perform the specific tasks required. As an example of the various levels,  
18 most subjects can be tested at three levels: a basic level, an intermediate level, and an  
19 advanced level. These levels can be modified in accordance with the subject to be tested.  
20 For example, a basic level question is utilized when the applicant has to demonstrate that they  
21 understand the functionality of the subject or have a comprehension of how to use the  
22 fundamentals of the subject. A basic skill set would be a person who has used the subject  
23 between one to six months, or someone who has formerly studied the subject but has not yet  
24 had a professional job in the topic area.

25 An intermediate level question is utilized when the applicant needs to demonstrate  
26 that they understand how to operate the commonly used functions in the subject, and how to  
27 troubleshoot common issues of the subject. An intermediate skill set would be a person who  
28 works with the subject on a daily basis and can navigate and troubleshoot the common issues  
29 within the subject. This person would not need to have any hands on supervision when using  
30 the functions inside the subject. The majority of technical people who work with any given  
31 subject on a daily basis would fit into this category.

32 An advanced level set of questions is utilized when the applicant needs to demonstrate  
33 that they have mastered how to operate the uncommon functions in the subject. The  
34 applicant who needs to demonstrate that they can troubleshoot uncommon issues that are



1 related to the subject is given the advanced level tests. An advanced skill set would be a  
2 person who has worked professionally in the subject for at least three years on a daily basis.  
3 This person would be able to technically lead a group and would be able to mentor other  
4 technical people in regards to the subject.

5 The above are merely representative examples of the flexibility of the system in  
6 accordance with the present invention. Other levels, or lesser levels, can be utilized  
7 depending on the subject. For most subjects, these three levels would be adequate.

8 In accordance with the present invention, the exam process is secure and tamper-  
9 resistant. Candidates can take an exam from anywhere in the world via the Internet. Since  
10 the exam and the system would reside on a network that is available 24 hours a day, an  
11 advantage is provided as opposed to taking the exam at the potential employer's facility. The  
12 Internet never closes. The candidate can take the exam at any time, day or night.

13 In accordance with one embodiment of the present invention, each exam question is  
14 set on a 80 second timer, to allow the candidate ample time to answer the question. The set  
15 time for each question is intended to make it difficult to cheat by utilizing manuals or other  
16 references. This is not intended as an absolute fool-proof method. The time may be set in  
17 such a way that if the candidate can utilize a reference and answer the questions in such a  
18 time, the skill level is already given as an indication.

19 Once a candidate takes their exam, the database instantly grades the exam and notifies  
20 the recruiter that a test has been taken. The recruiter may also go online to their private  
21 section of the database or the system to see a graph of how the grade was broken down and  
22 measured.

23 To ensure accurate and detailed reporting to the recruiters, each exam module is  
24 graded by subjects, skill levels, and categories. Each module is graded, then broken down  
25 into a results outline format that displays the subject, which shows the recruiter what the  
26 following questions consisted of. The next area of the results outline consists of the subject  
27 matter that is covered in the exam. A third category is the difficulty level of the questions.  
28 An additional category shows whether or not the question was answered correctly. A score is  
29 then given for the overall module which is generally used by the recruiter to understand  
30 where the inefficiencies, if any, exist in the candidate's technical abilities.

31 One embodiment of the present invention is illustrated in Figure 1. The client 100  
32 obtains access to the server 120 through a network connection 110 (steps 1 and 2). The client  
33 is a potential employer or another entity that has an interest in screening applicants. This  
34 includes employment agencies and the like. The network 110 connection can be a private

1 connection or a public connection. However, to maximize usage of the system, the Internet is  
2 utilized for maximum access. Larger entities can utilize the system over both private and  
3 public networks. The server 120 is the location of the database of all exams. Additionally  
4 the working or controlling software resides on the server 120. As indicated earlier, the server  
5 is not limited to one computer system but can be a collection of systems networked together  
6 to achieve the desired function. Access to the server includes an identification of the client  
7 user. The identification is used to verify that the user is a subscriber and also to locate any  
8 customized exam sets previously utilized or requested.

9       Once the client 100 has obtained access to the server 120 through the network 110,  
10 the client can select a new exam or set of exams. This is achieved by selecting from the  
11 exams existing on the server or by adding a private exam created by the client user. The  
12 selected exam or set of exams 130 is stored on the server 120 (step 3). The client 100 is  
13 provided with an access code to be given to any candidate to access the selected exam 130  
14 (steps 4, 5 and 6). The client can create as many selected exams as desired and each is given  
15 a different access code. The client passes the access code to any candidate 140 that the client  
16 wishes to be tested (step 7).

17       The candidate 140 utilizes the access code to connect to the server 120 and access the  
18 selected exam 130 (step 8). If the Internet is utilized as the network, access to the exam can  
19 be made at any time from any location, preferably using any standard browser software.  
20 Additionally, the client may request that the exam be accessed only during a limited time  
21 period either to duration or to time of the day. In this process, the candidate is asked to  
22 provide identification so that the employer can tie the results to the candidate. Examination  
23 centers can be set up at various locations where the identity of the candidate taking the exam  
24 can be verified. This is utilized where the candidate is suspected of having someone else take  
25 the exam for him or her or to prevent a group from assisting in taking the exam. Depending  
26 on the situation, other security means, including biometrics like voice signatures, can be  
27 employed. However, it is contemplated that in the majority of situations, such added  
28 measures are not required.

29       The exam program includes means to protect copying or printing of the questions or  
30 answers. Built in software is utilized for this purpose. Additionally, software to log off the  
31 network, if printing or copying is attempted, is utilized. Other tamper proof systems can also  
32 be employed. Each question is timed for a preset period. For example 80 seconds per  
33 question has been found appropriate for most situations. Other intervals may also be utilized.  
34 Once all the questions have answered or cycled, the candidate is denied access to the

1 questions. The candidate is optionally given the opportunity to comment on the exam or the  
2 process. This feedback is utilized to optimize the system to meet the various needs of clients  
3 and to improve the exam process based on the target group of candidates. Various options  
4 for obtaining feedback from the candidate are contemplated for utilization with the present  
5 invention.

6 Once the exam is completed, the system reviews the answers and generates a report  
7 150 of results or comments (step 9) to be provided to the client 100 (steps 10, 11 and 12). If  
8 desired, the client 100 can also access the actual selected exam taken by the candidate to  
9 review the specific answers. Figure 6 shows one sample of the results report for a candidate  
10 taking various skill level exams for the Microsoft® family of software products.

11 Figure 7 shows one sample of the results report for a candidate taking the basic skills  
12 level exam for HTML 4.0 knowledge.

13 In the "view exam results" area of the site, the recruiter sees all the exams they  
14 created, the number of candidates viewed, the number of candidates whose results have not  
15 been viewed and the exam passed number.

16 When an exam is selected, in order to view the exam result, as illustrated in figure 8,  
17 the recruiter can see the date when the candidate took the test, how long it took the candidate  
18 to complete the test and the date when the recruiter viewed the results. Results may also be  
19 deleted from this page.

20 Additionally, the system can offer the customer the ability to reset candidate's results  
21 through the "Manage Exam Takers" area of the site, as illustrated in figure 9. Now if a  
22 candidate loses their connection while taking a test, the recruiter can reset the candidate so  
23 they can retake the test.

24 As customer requirements change, the human resource or recruiter can now modify  
25 exams by clicking on "Modify or Delete an exam," as illustrated in figure 10. Then they  
26 select the exam to be modified and follow the same process as the "create an exam" process.  
27 Once the exam is modified, the HR/recruiter will be sent an automatic e-mail confirming the  
28 exam change.

29 As can be seen from the above discussion of an embodiment of the present invention,  
30 the human resources personnel or any recruiter would obtain significantly better information  
31 regarding the skills of any potential candidate. This is particularly useful in the more  
32 technical areas such as computer science.

33 Advantages of the present invention include the following:

- 1       1. The system includes means to reduce the likelihood of cheating. The product has  
2       timed questions and includes codes to prevent printing. Specifically, the "print  
3       screen" function is blocked. The system also includes random question selection so  
4       that duplicate tests will be infrequent.
- 5       2. The present system provides for exams covering an unlimited number of subjects.  
6       For each subject, a large number of questions are generated. In one embodiment, each  
7       subject would include about 300 questions. The actual exam given to any candidate  
8       would not include all of the questions. In one embodiment, each exam is 17  
9       questions.
- 10      3. The present invention allows the client to tailor the exam set to the particular  
11      candidate. In today's environment, each candidate is unique in their qualifications  
12      and often would have expertise in more than one technical field or discipline.
- 13      4. In addition, the client can load their own exam to the system for their own private use.
- 14      5. Feedback from the candidates is sought in order to continually optimize and modify  
15      the exams to meet the need of both the target candidates and the client.
- 16      6. The exam preparation is a process involving both technical experts and prominent  
17      authors in the subject field. The exams are subjected to several review stages prior to  
18      blind testing. The results of testing are utilized to enhance the product exam, where  
19      needed, prior to placing on the server system for use by clients.
- 20      7. The participation by the authors or experts in the subject field is encouraged by  
21      providing the experts with economic incentive tied to the net income of the system.  
22      The authors or experts are not usually employees of the organization but are outside  
23      experts who have excelled in their respective fields. This method results in tapping a  
24      larger pool of expertise than would be possible in a single organization.
- 25      8. Subscriber or clients are offered access to the system on a flat annual fee basis in  
26      addition to a one time one exam basis.

27       Although English is more often used than any other language, particularly in technical  
28       fields, the system is adapted to conduct the exams in various languages. This invention is  
29       applicable to any field or discipline requiring knowledge not readily available to recruiting  
30       personnel. Examples include computer technology, programming, network applications,  
31       office skills, scientific disciplines, medical fields, accounting and the like.

32       The hardware components utilized in the present invention are readily identifiable by  
33       a person skilled in the art. For example, a Pentium II 400 mhz with 30 gig of disk space is  
34       utilized with 3 T1 connections. The web server is running Windows NT and SQL 6.5. The

1 exams application is implemented using ASP (Active Server Pages). Other systems can be  
2 utilized to improve speed and storage capabilities. Additional Internet connections can also  
3 be provided depending on traffic requirements.

4 Although the present invention has been described above as employed on the Internet,  
5 the term *Internet*, as used herein, is also meant to include future developments, such as the  
6 Next Generation Internet (NGI) or Internet2.

7

## 1 I Claim:

- 2 1. A method for skills assessment of candidates by clients, comprising  
3 providing a server connected to a database of skill assessment exams;  
4 allowing clients to access said server via a network and electronically select at  
5 least one skill assessment exam;  
6 generating a code for each selected skill assessment exam;  
7 delivering a code for each selected skill assessment exam to said client, wherein  
8 said client supplies a candidate with a code corresponding to an exam that the client  
9 wishes to administer to said candidate; and  
10 allowing candidates access to said server to electronically complete the exam that  
11 the client wishes to administer to said candidate upon the candidate inputting the code  
12 corresponding to the exam that the client wishes to administer to said candidate.  
13
- 14 2. The method for skills assessment of candidates of claim 1, further comprising:  
15 automatically grading completed exams; and  
16 notifying said client of the completed exam.  
17
- 18 3. The method for skills assessment of candidates of claim 1, wherein the step of  
19 electronically selecting at least one skill assessment exam includes selecting a  
20 topic and a skill level.  
21
- 22 4. The method for skills assessment of candidates of claim 1, wherein the step of  
23 electronically selecting at least one skill assessment exam includes creating a  
24 customized exam by selecting a plurality of topics and a skill level for each topic.  
25
- 26 5. The method for skills assessment of candidates of claim 2, further comprising:  
27 allowing the client to access and view candidate's exam results.  
28
- 29 6. The method for skills assessment of candidates of claim 1, wherein  
30 administration of the exam is subject to time constraints.  
31
- 32 7. The method for skills assessment of candidates of claim 7, wherein the time  
33 constraints are selected from the group consisting of limiting the time period

- 1 within which an exam may be taken, limiting the length of time to complete the  
2 exam, and limiting the length of time to answer each question on an exam.  
3
- 4 8. The method for skills assessment of candidates of claim 1, further comprising  
5 providing security to the exam administration by a method selected from the  
6 group consisting of: limiting the location of the test administration, limiting the  
7 printing and copying of the exam by the candidate, requiring personal verification  
8 of candidate identity, and requiring biometric verification of candidate identity.  
9
- 10 9. The method for skills assessment of candidates of claim 1, wherein the client  
11 accesses the server via the Internet.  
12
- 13 10. The method for skills assessment of candidates of claim 1, wherein the candidate  
14 accesses said server to electronically complete the exam via the Internet.  
15
- 16 11. A system for skills assessment of candidates by clients, comprising  
17 a server connected to a database of skill assessment exams;  
18 means for allowing clients to access said server via a network and electronically  
19 select at least one skill assessment exam;  
20 means for generating a code for each selected skill assessment exam;  
21 means for delivering a code for each selected skill assessment exam to said client,  
22 wherein said client supplies a candidate with a code corresponding to an exam that the  
23 client wishes to administer to said candidate; and  
24 means for allowing candidates access to said server to electronically complete the  
25 exam that the client wishes to administer to said candidate upon the candidate  
26 inputting the code corresponding to the exam that the client wishes to administer to  
27 said candidate.  
28
- 29 12. The system for skills assessment of candidates of claim 11, further comprising:  
30 means for automatically grading completed exams; and  
31 means for notifying said client of the completed exam.  
32

- 1       13.    The system for skills assessment of candidates of claim 11, including means for  
2            creating a customized exam by selecting a plurality of topics and a skill level for  
3            each topic.  
4
- 5       14.    The system for skills assessment of candidates of claim 12, further comprising  
6            means for allowing the client to access and view candidate's exam results.  
7
- 8       15.    The system for skills assessment of candidates of claim 11, further comprising  
9            means to provide security to the exam administration selected from the group  
10           consisting of: an examination center, software limiting the printing and copying of  
11           the exam by the candidate, personal verification of candidate identity, and  
12           biometric verification of candidate identity.  
13
- 14      16.    The system for skills assessment of candidates of claim 11, wherein the means for  
15           allowing clients to access said server and means for allowing candidates to access  
16           said server is the Internet.  
17
- 18      17.    A system for skills assessment of candidates by clients, comprising  
19           a server connected to a network;  
20           a database of skill assessment exams connected to said server;  
21           at least one client computer with access said server via the network to  
22           electronically select at least one skill assessment exam from said database;  
23           a code generated for each selected skill assessment exam;  
24           at least one candidate computer connected to said network to access said server,  
25           wherein candidate computers access said server so candidates can electronically  
26           complete the exam that the client wishes to administer to said candidate upon the  
27           candidate inputting the code corresponding to the exam that the client wishes to  
28           administer to said candidate.  
29
- 30      18.    The system for skills assessment of candidates of claim 17, wherein the network is  
31           the Internet.  
32
- 33      19.    The system for skills assessment of candidates of claim 17, further comprising:  
34           software on said server operable to automatically grade completed exams; and



1                    software on said server operable to notify said at least one client computer  
2                    upon completion of an exam.

3

4        20.        The system for skills assessment of candidates of claim 17, further comprising:  
5                    software on said server operable to allow the at least one client computer to access  
6                    and view candidate exam results.

7

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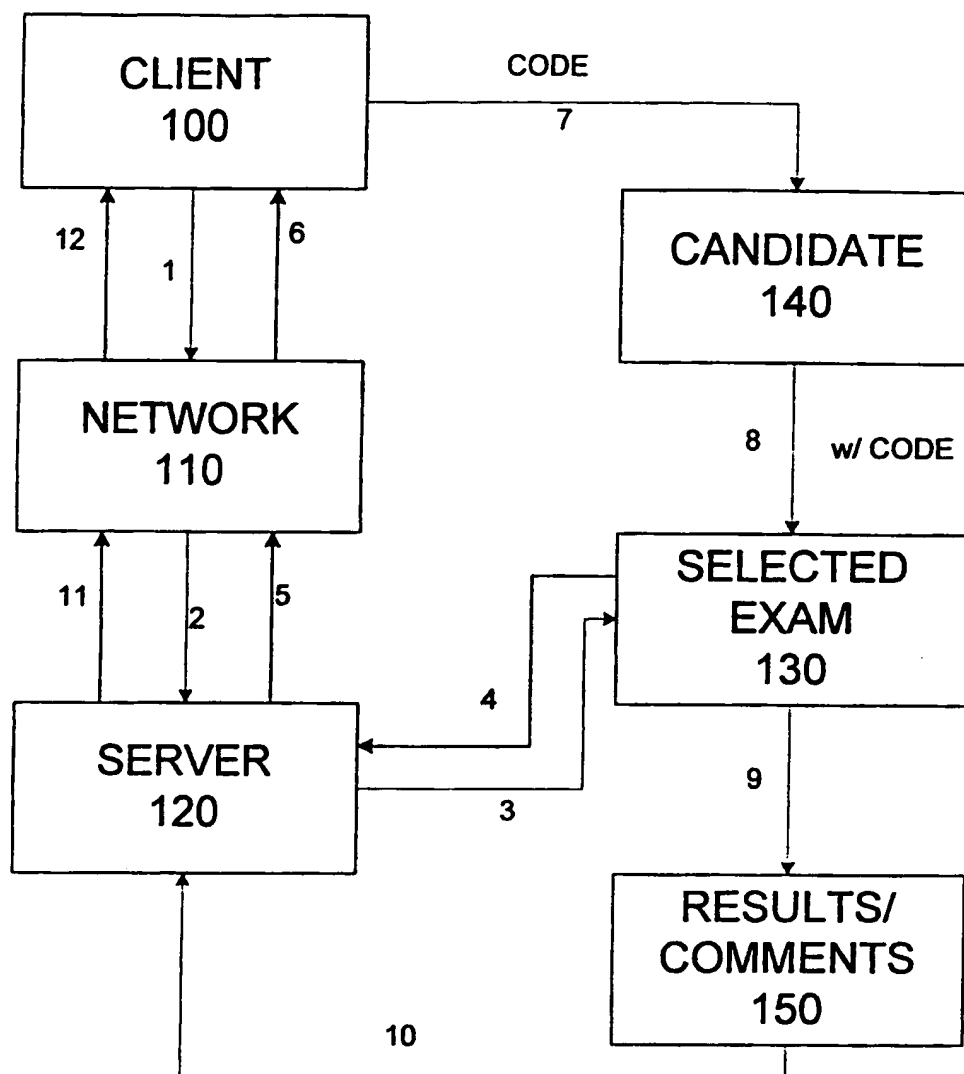


FIGURE 1

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ABAP/4 Programming for SAS	Digital Unix for Users, Administrators and Programmers	Lotus WordPro 98	Novell 4.1 for Administrators and Engineers	Solaris for Users, Administrators, and Programmers
Access Basic 2.0	DOS 6.0	MFC	Object PAL 5.0	Solaris Engineer
Access VBA	DOS/VSE	MS Excel 97	OOP	SQL 92
ActiveX	Focus	MS Exchange 5.0 for Administrators	Oracle 7.3	SQL Developer
ADO	FORTTRAN 77/90	MS Exchange 5.5 for Administrators	Oracle 7.3 DBA	SQL Server
Adobe Photoshop 5	GroupWise 5.0	MS Frontpage 97	Oracle 7 and 8	Sun OS Administrator and Engineer
ADX Systems Engineer	Hardware Troubleshooting - Beginner and Advanced	MS IE 4.0	Oracle Designer 2000	Sybase 11
Appletalk	HTML 2.0/3.x/4	MS IIS 3.0	Oracle Developer 2000	TCP/IP
AS/400 for Administrators and Engineers	HP-UX for Users, Administrators and Programmers	MS NT 4.0 Enterprise	Oracle Financials and Manufacturing	UNIX Shell
ASP 2.0	HP-UP for System Engineers	MS NT 4.0 Networking	OS/2 Users and Administrators	UNIX System Administrators and Engineers
Assembler	Illustrator 8	MS NT 4.0 Server Administration	PAL 4.0	UNIX Users, Administrators, and Programmers
AutoCAD 11 and 14	IMS	MS NT 4.0 Server Engineer	PASCAL	Ultrix Users, Administrators, and Programmers
BDE/DB for C++	Informix	MS NT 4.0 Workstation Administration	PC Skills Survey	VB Script
C and C++	Java 1.1 and 1.2	MS Office 4.2 Help Desk	PeopleSoft	Visual Basic 4.0, 5.0, and 6.0
CGI Concepts	JavaScript 1.3	MS Office 95 Help Desk	Perl 5 for UNIX and NT	Visual C++ 4.0, and 6.0
CGI Scripts UNIX	JCL	MS Office 97 Help Desk	PL/SQL	Visual FoxPro 3
CICS/COBOL	JDBC	MS Office Trainer	PowerBuilder 4 and 5	Visual Interdev 6
Client/Server Fundamentals	LAN Hardware	MS Outlook 97	Pro/E	Visual J++ 1.1 and 6
COBOL and COBOL II	Lotus 1-2-3	MS PowerPoint 97	Quark Express	Windows 3.1 Help Desk
COBOL for Year 2000	Lotus Approach 98	MS Project 98	RDO	Windows 95 Technical and Troubleshooting
Corel Draw 8	Lotus Domino 4.5 and 5	MS SMS 2.0	RPG, RPG III 2.0	Windows 98
Crystal Reports 6.0 and 7.0	Lotus Freelance 98	MS SQL 6.5 DBA	Relational Database Design	Windows NT 4.0 Installation (Server)/(Client)
Data Communications	Lotus Notes 4.0	MS Word 97	SAP ABAP 14	Windows NT 4.0 Troubleshooting
DB2	Lotus Notes 4.5 for Users, and Developers	MS Works	SAP R13 Financials, Materials Mgmt and Sales Distribution	Windows Programming
DBase III+	Lotus Notes 4.6 for Developers and Administrators	MVS	SCO UNIX/Administrators	WordPerfect 7.0
Delphi 3 and 4	Lotus Notes Mail	Netscape 4.0	SCO UNIX/Users	XML
	Lotus Script	NetWare 3.x/4.x	Smalltalk	

FIGURE 2

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Data Communications	MS Office 4.2 Help Desk	NetWare 4.x	Windows 95 Troubleshooting
DOS 6.x	MS Office 95 Help Desk	PC Skills Survey	Windows NT 4.0 Troubleshooting
Hardware Troubleshooting (Beginner and Advanced)	MS Office 97 Help Desk	Windows 3.1 Troubleshooting	Windows NT 4.0 Server Installation
LAN Hardware	NetWare 3.4	Windows 95 Technical Skills	Windows NT 4.0 Workstation Installation

FIGURE 3/10

Access Basic 2.0	Oracle	PowerBuilder 5
C and C++	Oracle DBA	RDBMS Design
COBOL	Java	Visual Basic 5
DB2	JCL	SQL

FIGURE 4

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Advanced Spelling	Macintosh Skills
Basic Office Skills Survey	Office Filing Skills
Bookkeeping	Office Grammar and Spelling Skills
Data Entry	Office Math Skills
Data Entry/10 Key	Payroll
Internet Basics	Proofreading
Legal Staff Skills	Typing Speed

FIGURE 5/10

Subject	Skill Level	Correct	Incorrect	Percentage
Excel 97 Support	Basic	12	5	70 %
Word 97 Support	Basic	12	5	70 %
NT 4.0 Workstation Administration	Intermediate	14	3	82 %
Outlook 98 Support	Basic	10	7	58 %
Windows 95 Support	Intermediate	0	17	0 %
<b>Totals</b>		<b>48</b>	<b>37</b>	<b>56 %</b>

FIGURE 6

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Subject	Skill Level	Correct	Incorrect	Percentage
HTML 4.0	Basic	15	2	88 %

Theme	Topic	Sub-Topic	Answer
Architecture	Syntax	Tag Order	Correct
Architecture	Features	Accessibility	Correct
Attributes	CLASS/ID	Differentiation	Correct
Architecture	Links	Capabilities	Correct
Architecture	Character Entities	Wicket	Incorrect
Architecture	Language Model	Functionality	Correct
Architecture	Origins	Creator	Correct
Architecture	Syntax	Protocols	Correct
Architecture	Development	Version Control	Correct
Architecture	Character Entities	Identification	Correct
Architecture	Frames	Compatibility	Correct
Architecture	Browsers	Request Methods	Incorrect
Architecture	Browsers	Caching	Correct
Tags	<title>	Functionality	Correct
Architecture	Images	Functionality	Correct
Architecture	Lists	Identification	Correct
Architecture	Forms	Troubleshooting	Correct

FIGURE 7

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**View Candidates for DES000263 - Select Candidate - Step 2**

- ▶ **Help**
- ▶ **Select another Exam**
- ▶ **Exam Administration Main Menu**

Candidate Name	Date Taken	Date Viewed	Exam Duration	Mark for Deletion
▶ <b>David Kosar</b>	3/22/00	6/4/00	27 Min	<input type="checkbox"/>
▶ <b>Ho Voong</b>	4/4/00		14 Min	<input type="checkbox"/>

Check each box for the candidate(s) you wish to remove then click the Delete Button.

**Delete****Help****FIGURE 8**

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## Exam Taker Management Area

The following table displays users that have taken exams. Sometimes you may want to permit the user to retake an exam. You can do so by clicking on the user name. This removes any record of the user taking any exams AND erases the results the user previously had for the respective exam he or she took.

► Back

Name	Email	Exam Name
cxbb	aaf@asasf.com	testinger
David Kosar	Dkosar1999@aol.com	DES000263
dfgdfg	asfaf@adfg.com	tested
dfgdfg	sdsd@asf.net	netscape testing
dfhdf	gfhgf@jhfgjf.com	DES000263
dfhh	fsdf@aasd.com	tested
dsf	sdfsdf@uhfjhf.com	DES000263
Example Test	Example@Test.com	Example Exam
fghfg	sdsg@iiiiii.com	ANNES TEST
George Hudson	test@rr.com	Wall Mart 123
hh	hh@hh.hhh	AON 000154
Ho Voong	hovoong@yahoo.com	DES000263
JAY Jones	jayknowledge@aol.com	CHAM000102
Jay Testing the Site Testing	gsdg@jff.com	AON 000154
Jon Jones	jmjones@hotmail.com	MAF00100
Lori York	L_York@Juno.com	CHAM000102
sdsdf	afadfaf@fgfg.com	walmart 12365
test	test@aol.com	WAL000006
Testing Testing	testing@testing.com	AON 000154
ww	sfas@sdg.net	netscape testing
zxvv	cvzcv@asff.org	ddddddddd

► Back

---

FIGURE 9



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**Modify or Delete an Exam - Select an Exam - Step 1**

- ▶ Help
- ▶ Cancel Action

---

**Click on the Exams you wish to modify**

Exam Name:	Passcode:	Created:
▶ RUS000100	001868	12/27/99
▶ CHAM000102	043178	12/09/99
▶ CHAM000101	323191	12/09/99
▶ DON00100	348665	01/06/00
▶ DES000263	477001	12/11/99
▶ WAL000006	613625	12/09/99
▶ MAF00100	653754	01/05/00
▶ CHAM000103	801388	12/09/99
▶ AON 000154	982713	12/07/99
▶ MAF00100 PHASE 2	989656	01/13/00

- 
- ▶ Help
  - ▶ Cancel Action
- 

**FIGURE 10**